

CLAIMS

1. Device (10) for conveying objects such as preforms and bottles, of the type comprising a rotating support (12) which is driven in rotation continuously about a substantially vertical axis of rotation (AO) and which carries a transfer arm (14), of the type in which the transfer arm (14) comprises a supporting element (16) which is mounted in a swivelling manner with respect to the rotating support (12), about a swivelling spindle (18) which is substantially parallel to the axis of rotation (AO) of the support (12), and a grasping head (20) which is able to support at least one object and which is mounted in a sliding manner with respect to the supporting element (16), in a direction (BO) approximately radial with respect to the axis of rotation (AO) of the support (12), between a proximal retracted position and a distal extended position with respect to the axis of rotation (AO), of the type in which the grasping head (20) is attached on a slider (22) sliding in a slide (24) fixed to the supporting element (16), and of the type comprising a first cam system and a second cam system for driving the grasping head (20) in its sliding and the supporting element (16) in its swivelling respectively, according to the angular position of the arm (14) about the axis of rotation (AO) of the support (12),

characterized in that the slide (24) comprises a groove (25), in that the slider (22) is produced in one piece with the overall shape of a rail, the profile of the slider (22) being complementary to that of the profile of the groove (25) of the slide (24), such that the slider (22) is held vertically downwards by the slide (24) and its profile, and in that the grasping head (20) is attached cantilevered on the distal end section (89) of the slider (22).

2. Device (10) according to the preceding claim, characterized in that the first cam system comprises a first cam follower element (34) which is fixed to the distal end section (89) of the slider (22).

3. Device (10) according to the preceding claim, characterized in that the first cam follower element (34) is a roller called the extension roller which is mounted freely rotating on a roller spindle (100) substantially parallel with the axis of rotation (AO) of the support (12), and in that the roller spindle (100) is fixed on the distal end section (89) of the slider (22) through a lower lug (96) of the grasping head (20), in such a way as to constitute a means of fixing the grasping head (20) on the slider (22).

10 4. Device (10) according to any one of the preceding claims, characterized in that the transfer arm (14) comprises a return device (84) which is interposed totally along the direction (BO) between the distal end section (89) of the slider (22) and the supporting element (16) in such a way as to return the grasping head (20) to its retracted position.

15 5. Device (10) according to the preceding claim, taken in combination with Claim 3, characterized in that the distal end (106) of the return device (84) is fixed on the roller spindle (100) carrying the extension roller (34).

20 6. Device (10) according to Claim 4 or 5, characterized in that the supporting element (16) comprises a main body (72) which is provided with a swivelling leg (76) carrying at least one cam follower element (36, 38) which is part of the second cam system, and in that the proximal end (83) of the return device (84) 25 is fixed on the swivelling leg (76).

7. Device (10) according to any one of Claims 4 to 6, characterized in that the return device (84) is a spiral draw-spring which extends entirely under the lower face (98) of the slider (22) in the retracted position.

30 8. Device (10) according to any one of the preceding claims, characterized in that the grasping head (20) comprises an end lug (90) for fixing it to the distal end transverse face (92) of the slider (22) and a fixing screw (94) which is screwed into the

distal end transverse face (92) of the slider (22) through the end lug (90).

9. Device (10) according to any one of the preceding claims, characterized in that the proximal end section (108) of the 5 slider (22) comprises a stop (110) which is able to cooperate with an associated surface (112) of the supporting element (16) for determining the maximum extension travel of the grasping head (20).

10. Device (10) according to any one of the preceding 10 claims, characterized in that the supporting element (16) comprises a ball bearing (68) which receives the lower axial end (70) of the swivelling spindle (18) such that the supporting element (16) is mounted freely rotating about the swivelling spindle (18).

15 11. Device (10) according to the preceding claim, characterized in that the swivelling spindle (18) comprises a threaded intermediate section (60) which is screwed into a spacer (50) fixed to the rotating support (12) to allow height adjustment 20 of the supporting element (16) with respect to the rotating support (12) and means (64) of locking the swivelling spindle (18) in an adjusted position with respect to the spacer (50).

12. Device (10) according to the preceding claim, characterized in that the upper axial end of the swivelling spindle (18) comprises a means (66) of driving the swivelling spindle (18) 25 in rotation for the purpose of adjusting the height of the supporting element (16).